

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Status of Claims:

No claims are currently being added or cancelled.

Claims 1 and 9 are currently being amended.

This amendment and reply amends claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claims remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-16 are pending in this application.

Claim Rejections – Prior Art:

In the final Office Action, claims 1 and 9 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Publication No. 2002/0192519 to Fujita et al.; and claims 2-8 and 10-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujita et al. in view of U.S. Patent Publication No. 2001/0024746 to Ueda et al. and further in view of U.S. Patent Publication No. 2002/00646697 to Sugiura et al. These rejections are traversed for at least the reasons given below.

Figure 11 of Fujita et al. shows that the voltage-current characteristic of a fuel cell changes from the curve (Afl) of the fuel cell operating under a normal condition to the curve (Af2) of the fuel cell whose performance has dropped because the fuel cell has been left unattended for a long period. See paragraph [0173] of Fujita et al. To address the performance drop of the fuel cell, Fujita's system employs a configuration in which a power control unit (700) revises a voltage-current characteristic map of the fuel cell (200), at every cycle of power control process (see paragraph [0158] of Fujita et al.), by detecting an actual output voltage and an actual output electric current with the sensors (868, 870) and by calculating the voltage-current characteristic map from the detected actual output voltage and actual output electric current. The power control unit (700) calculates an output electric

current I_0 according to the calculated voltage-current characteristic map, and then calculates an upper limit of a possible output of the fuel cell (the FC maximum power Q_{mx}) from the product of V_0 and I_0 (see paragraphs [0172]-[0175] of Fujita et al.). This means that measurement of the actual output voltage and the actual output electric current is required in the system of Fujita et al. in order to determine the FC maximum power Q_{mx} .

Further, Figure 12 of Fujita et al. shows that the output characteristic of the fuel cell (200) fluctuates according to a flow rate of the supplied gas. The output characteristic corresponds to the curve (Af4) when the flow rate is high, but when the flow rate is low, and the output characteristic corresponds to the curve (Af3) and the power of the fuel cell is thereby limited according to the curve (Af3). To address the change of the fuel cell characteristic, Fujita calculates the electric current (I_{fc}) corresponding to the required electric power (E_f) according to the upper characteristic map as shown in Figure 12, and calculates the voltage (V_{fc}) corresponding to the electric current (I_{fc}) according to the lower characteristic map as shown in Figure 12 (see paragraphs [0179]-[0180] of Fujita et al.). These characteristic maps are created beforehand and thus predetermined by mapping the voltage and current values previously measured under various conditions of the flow rate of the supplied gas.

In the present invention, as recited in claims 1 and 9, a target current at the target power is calculated **directly from** a nominal power-current characteristic obtained from a nominal output characteristic of the fuel cell, and a command output power is calculated from the **product of the calculated target current and an actual output voltage detected by the detector.**

Fujita et al. fails to disclose or suggest the above features recited in claims 1 and 9. As mentioned above, in the case of Figure 11 of Fujita et al., the FC maximum power Q_{mx} is calculated from **the actual output voltage and the actual output electric current both of which are detected by the sensors.** In the case of Figure 12 of Fujita et al., the power limitation is set based on the **predetermined characteristic maps obtained by mapping voltage and current values previously measured** under various conditions of the flow rate of the supplied gas.

Since Fujita et al. does not disclose or suggest that a target current at the target power is calculated directly from a nominal power-current characteristic obtained from a nominal output characteristic of the fuel cell, and a command output power is calculated from the product of the calculated target current and an actual output voltage detected by the detector, it cannot anticipate claims 1 and 9.

It is also noted that Ueda et al. and Sugiura et al., which are cited in rejections of other claims, do not rectify the above-mentioned deficiencies of Fujita et al.

Accordingly, the presently pending claims patentably distinguish over the cited art of record, when taken as a whole.

Conclusion:

Since all of the issues raised in the final Office Action have been addressed in this Amendment and Reply, Applicant believes that the present application is now in condition for allowance, and an early indication of allowance is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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